



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# SCIENTIFIC BOOKS

## THE CONTROL OF HUNGER IN HEALTH AND DISEASE

By ANTON JULIUS CARLSON, *Professor of Physiology at the University of Chicago.*

A summary of the work of the stomach, with special reference to hunger and appetite, carried on at the Hull Physiological Laboratory, at the University of Chicago during the last four years. 219 pages. Price \$2.00 net.

University of Chicago Press, Chicago, Ill.

## STATE SANITATION

By GEORGE CHANDLER WHIPPLE, *Professor of Sanitary Engineering at Harvard University. Member of the Public Health Council, Massachusetts State Department of Health.*

The primary object of this book is to set forth the past work of the Massachusetts State Board of Health, so that it may be known by the people of the present generation. 377 pages.

The Harvard University Press, Cambridge, Mass.

## PRINCIPLES OF OCEAN TRANSPORTATION

By EMORY R. JOHNSON, Ph.D., Sc.D., *Professor of Transportation and Commerce of the University of Pennsylvania,* and GROVER C. HUEBNER, Ph.D., *Assistant Professor of Transportation and Commerce at the University of Pennsylvania.*

This book embodies all the principal changes that have recently occurred in methods of ocean transportation throughout the world. Illustrated with half-tones, maps and diagrams. 513 pages.

D. Appleton and Company, New York City

## DESCRIPTIVE MINERALOGY

By WILLIAM SHIERLEY BAYLEY, *Professor of Geology at the University of Illinois*

A text-book for college classes, designed to give the student a comprehensive view of modern mineralogy, rather than a detailed knowledge of many minerals. 268 illustrations. 542 pages.

D. Appleton and Company, New York City

## INORGANIC CHEMISTRY

By ALEXANDER SMITH, *Professor of Chemistry in Columbia University.*

A thorough treatise of inorganic chemistry for students beginning this study in college, university or professional schools. Third edition. 925 pages.

The Century Co., New York City

## SOIL PHYSICS AND MANAGEMENT

By J. G. MOSIER, B.S., *Professor of Soil Physics, University of Illinois,* and A. F. GUSTAFSON, M.S., *Assistant Professor of Soil Physics, University of Illinois.*

The publication of this book fulfils three purposes: First, a text-book for agricultural students; second, a reference book for the practical farmer; and, third, an aid to the landowner who desires information in the management of his land. 202 illustrations. 442 pages.

J. B. Lippincott and Company, Philadelphia, Pa.

## FIELD BOOK OF INSECTS

By FRANK E. LUTZ, *Associate Curator, Department of Invertebrate Zoology, American Museum of Natural History*

A popular treatise of the more common insects, with special reference to those of the Northeastern United States. 800 illustrations. 409 pages. Price, \$2.50 net.

J. P. Putnam's Sons, New York City

## A TEXT-BOOK OF PRECIOUS STONES

By FRANK B. WADE, B.S., *Head of the Department of Chemistry, Shortridge High School, Indianapolis, Ind.*

This book presents, in as natural an order as possible, the fundamental principles and methods in use for identifying precious stones. 318 pages. Price, \$2.00 net.

J. P. Putnam's Sons, New York

## COMPARATIVE ANATOMY OF VERTEBRATES

By J. S. KINGSLEY, *Professor of Zoology at the University of Illinois*

A text-book of comparative anatomy, laying special emphasis on the embryological side of the study. Second edition. 406 illustrations. 449 pages. Price, \$2.00 net.

P. Blakiston's Son and Company, Philadelphia, Pa.

## TOPOGRAPHY AND STRATEGY IN THE WAR

By DOUGLAS WILSON JOHNSON, *Associate Professor of Physiology, Columbia University.*

This book treats the relationship between inanimate nature and the science of war and gives a picture of the different war fronts in order that the military campaigns of the war may be followed with greater ease. 211 pages. \$1.75 net.

Henry Holt & Co., New York

## GENERAL ZOOLOGY

By A. S. PEARSE, *Associate Professor in the University of Wisconsin.*

This book has been written to be read by students of eighteen to twenty years of age. With this idea in view both the illustrations and text have been prepared more in the style of a natural history than of an anatomy. 366 pages.

Henry Holt & Co., New York

## HISTORY OF MEDICINE

By FIELDING H. GARRISON, *Principal Assistant Librarian Surgeon General's Office, Washington, D. C.*

This volume has been written with a definite intention of stimulating the student to do his own thinking and research, by interesting him in the subject from the start. 905 pages. Cloth \$6.50 net.

W. B. Saunders Co., Philadelphia, Pa.

## A SHORT HISTORY OF SCIENCE

By W. T. SEDGWICK and H. W. TYLER of the *Massachusetts Institute of Technology.*

This volume seeks to furnish the student and the general reader with a concise account of the origin of our scientific knowledge and scientific methods. 474 pages. Price \$2.50 net.

The Macmillan Co., New York

## EVERYMAN'S CHEMISTRY

By ELLWOOD HENDRICK, New York City.

This book aims to give to the average man a general realization of the tremendous importance of chemistry and its application in actual life. 373 pages.

Harper & Brothers, New York

## Publications of Carnegie Institution of Washington

The publications of the Institution now number over 350 volumes, the subjects including Anatomy, Archaeology, Astronomy, Botany, Chemistry, Economics and Sociology, Embryology, Experimental Evolution and Heredity, Engineering, Folk-Lore, Geology, History, International Law, Literature, Mathematics, Medicine, Nutrition, Philology, Physics, Zoology. Classified and descriptive lists will be sent postpaid on application.

### Botany and Related Subjects *In Press*

- 248. BRITTON, N. L., and N. N. ROSE. The Cactaceae. Descriptions and Illustrations of Plants of the Cactus Family. Quarto in 4 vols. Volume I will appear in June or July, 1919. It will be illustrated by 301 text-figures and 36 plates; of the latter, 28 are in colors.
- 286. WEAVER, JOHN E. The Ecological Relation of Roots. Octavo.
- 287. SPOEHR, H. E. The Carbohydrate Economy of Cacti. Octavo.
- 289. DOUGLAS, A. E. Climatic Cycles and Tree-growth. Octavo.
- 290. CLEMENTS, FREDERIC E. Plant Indicators: The Relation of Plant Communities to Conditions and Practices. Octavo.
- 297. MACDOUGAL, D. T. Hydration and Growth. Octavo.

Orders for above publications may be made through booksellers or sent directly to the Institution.

All communications should be addressed to

**CARNEGIE INSTITUTION OF WASHINGTON  
WASHINGTON, D. C.**

## Marine Biological Laboratory

Woods Hole, Mass.

### INVESTIGATION

Entire Year

Facilities for research in Zoology, Embryology, Physiology and Botany. Seventy-six private laboratories, \$100 each for not over three months. Thirty tables are available for beginners in research who desire to work under the direction of members of the staff. The fee for such a table is \$50.00.

### INSTRUCTION

July 2 to August 12,  
1919

Courses of laboratory instruction with lectures are offered in Invertebrate Zoology, Protozoology, Embryology, Physiology and Morphology and Taxonomy of the Algae. Each course requires the full time of the student. Fee, \$50. A lecture course on the Philosophical Aspects of Biology and Allied Sciences is also offered.

### SUPPLY DEPARTMENT

Open the Entire Year

Animals and plants, preserved, living, and in embryonic stages. Preserved material of all types of animals and of Algae, Fungi, Liverworts and Mosses furnished for classwork, or for the museum. Living material furnished in season as ordered. Microscopic slides in Zoology, Botany, Histology, Bacteriology. Price lists of Zoological and Botanical material and Microscopic Slides sent on application. State which is desired. For price lists and all information regarding material, address

GEO. M. GRAY Curator, Woods Hole, Mass.

The annual announcement will be sent on application to The Director, Marine Biological Laboratory, Woods Hole, Mass.

# SCIENCE

**A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE**

FRIDAY, DECEMBER 19, 1919

Agricultural Botany in Secondary Education, Professor Herbert F. Roberts.

Grants for Research of the American Association for the Advancement of Science, Professor Joel Stebbins.

Scientific Events:—

The British Association and Scientific Research; The Work of the National Committee on Mathematical Requirements; Chemical Lectures at West Point and Annapolis.

Scientific Notes and News.

University and Educational News.

Discussion and Correspondence:—

Charcoal Activation, H. H. Sheldon. Aged Bean Seed, a Control for Bacterial Blight of Beans, C. W. Rapp. The Flagellation of the Nodule Organisms of the Leguminosae, Roy Hansen. The Supposed Scalls of the Cottid Fish Jordania, Professor T. D. A. Cockerell.

Report of the Committee of the American Chemical Society on a list recommending Chemical Tests for Libraries, W. A. Hamor.

Special Articles:—

An Unexcelled Medium for the Preservation of Cadavers, Professor Arthur William Myer.

The American Chemical Society, Dr. Charles L. Parsons.

Single Numbers 15 cents

FRIDAY, DECEMBER 26, 1919

The Building of Atoms, Professor William D. Harkins.  
The Disruption of Atoms by Alpha Rays, Professor G. Fulcher.

The Festschrift of Svante Arrhenius.

The Death of Lady Allardye.

Scientific Events:—

Gift to the Museum of Vertebrate Zoology of the University of California; Loss of Geologists by the National Survey; Reduced Railway Fares to Meetings of Scientific Association for the Advancement of Science.

Scientific Notes and News.

University and Educational News.

Discussion and Correspondence:—

A Proposal of Two New Miocene Formational Names; I. Carlotta J. Maury. Snow Doughnuts, Dr. W. Armstrong Price. Variation of Fishes according to Latitude, A. Huntsman. Constants and Variables in Biology, J. R. la Torre Bueno.

Scientific Books:—

Chandler on Animal Parasites and Human Disease, Professor Henry B. Ward.

The Tennessee Academy of Science, Roscoe Nunn.

The American Chemical Society, Dr. Charles L. Parsons.

Annual Subscription \$5.00

Published every Friday by

**THE SCIENCE PRESS**

LANCASTER, PA.

GARRISON, NEW YORK.

Sub-Station 84: New York

# SCIENCE PROGRESS

A QUARTERLY REVIEW OF SCIENTIFIC THOUGHT, WORK AND AFFAIRS

EDITED BY SIR RONALD ROSS, F.R.S., D.Sc., M.D., Etc.

SCIENCE PROGRESS owes its origin to an endeavor to found a scientific journal containing original papers and summaries of the present state of knowledge in all branches of science. The necessity for such a journal is to be found in the fact that, with the specialization which necessarily accompanies the modern development of scientific work and thought, it is increasingly difficult for even the professional man of science to keep in touch with the progress achieved and the trend of thought in subjects other than those in which his immediate interests lie. This difficulty is felt by teachers and students in schools and colleges, and by the general educated public interested in scientific questions. SCIENCE PROGRESS claims to have filled this want.

Published early in January, April, July, and October, by John Murray, 50a, Albemarle Street, London, W., England. Price of a single number is 6/- net. Annual subscription (including postage) 25/6.

## Important Recent Special Publications of the Philippine Bureau of Science

**SPECIES BLANCOANÆ:** A critical revision of the Philippine species of plants described by Blanco and by Llanos. By E. D. Merrill. 424 pages. Postpaid \$2.25.

**PHILIPPINE WATER SUPPLIES:** By G. W. Heise and A. S. Behrman. 218 pages and 19 plates. Postpaid \$1.75.

**AN INTERPRETATION OF RUMPHIUS'S HERBARIUM AMBOINENSE:** By E. D. Merrill. 596 pages and 2 maps. Postpaid \$3.00.

**The Philippine Journal of Science**, a monthly (no longer issued in sections), per year \$5.00.

A list of the publications of the Philippine Bureau of Science and a sample copy of the Philippine Journal of Science will be sent upon request.

Subscriptions and orders for publications should be sent to

## Philippine Journal of Science

Bureau of Science

Manila, P. I.

## The Microscope

12th Edition, Published April 10, 1917  
Re-Written and largely Re-Illustrated

By SIMON HENRY GAGE of Cornell University  
Postpaid \$3.00

COMSTOCK PUBLISHING CO., Ithaca, N. Y.

Memoirs of the Wistar Institute of Anatomy and Biology. No. 6, 1915

## THE RAT

Data and Reference Tables. 278 Pages. 89 Tables.  
Bibliography.  
Compiled and Edited by HENRY H. DONALDSON.  
Postpaid, \$3.00.

The Wistar Institute

Philadelphia, Pa.

## ROMEIKE'S

## PRESS CLIPPINGS

are now an absolute necessity for every scientific man. By methodical searching through the most important papers and periodicals published in this country and abroad we are able to supply you at short notice with information on any subject which perhaps you would be unable to find yourself in libraries or reference books after spending days or even weeks at such a task. Write for further information.

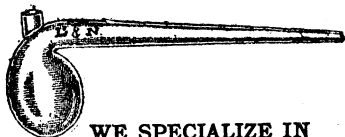
HENRY ROMEIKE, Inc.

106-110 Seventh Avenue

New York City

## Are You About To Buy Chemical Apparatus?

Drop us a line before you buy and we'll try to show you what you may gain from buying from us.



**WE SPECIALIZE IN**  
 Graduated and Blown Glassware  
 Thermometers, Hydrometers  
 Coors and Guernsey Porcelain  
 Pyrex Glassware  
 All kinds Filter Paper, Hardware  
 Heavy Separatory Funnels and Kipp's  
 Generators and Stains

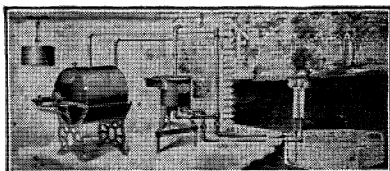
*Our 500-page catalogue sent upon request*

**LENZ APPARATUS CO.**

Manufacturers—Dealers—Importers

18 East Sixteenth Street  
 New York City, U. S. A.

## GAS—GAS



### The "Detroit" Combination Gas Machine

Automatically makes the best  
 and cheapest gas for

#### Laboratory Uses of Every Character

Heating—Cooking—Lighting  
 Over 30,000 in daily use

*Descriptive catalogue and names of users in your  
 locality sent on request*

**THE DETROIT HEATING &  
 LIGHTING CO.**

612 Wight St.

Detroit, Mich.

Established 1868

*Published on June 20*

## Carnegie Pensions

By J. McKEEN CATTELL

Together with Extracts from Letters from Two Hundred and Fourteen College and University Professors, an Article on the History of the Carnegie Foundation by Joseph Jastrow, and the Reports of the Committee on Pensions and Insurance of the American Association of University Professors.

*Pages viii+253. Price, \$1.50 Postpaid*

**THE SCIENCE PRESS**

GARRISON

NEW YORK

Any of the following recent publications of The Prudential Insurance Company of America will be sent free on request:

*Pauper Burials and the Interment of the Dead in Large Cities.*

*A Plan for a more Effective Federal and State Health Administration.*

*Failure of German Compulsory Health Insurance—A War Revelation.*

*A Plea and a Plan for the Eradication of Malaria Throughout the Western Hemisphere.*

*The Malaria Problem in Peace and War.*

*The Sanitary Progress and Vital Statistics of Hawaii.*

*Army Anthropometry and Medical Rejection Statistics.*

*Influenza—Chart.*



**The Prudential Insurance Company  
 OF AMERICA**

HOME OFFICE, NEWARK, N. J.

Forrest F. Dryden, President

*Incorporated Under the Laws of the State of New Jersey*

# The Scientific Monthly

Entered as second-class matter October 1, 1916, at the post-office of Lancaster, Pennsylvania,  
under the Act of March 3, 1879

## PUBLISHER'S NOTICE

It has become necessary to increase the subscription price of THE SCIENTIFIC MONTHLY to Five Dollars a year. All readers know to their misfortune that this increase is less than that which has taken place during the past five years in the cost of many necessities of life. The price of the paper on which the magazine is printed has increased 147 per cent. Unfortunately the salaries of scientific and professional men and the incomes of libraries and educational institutions have not increased in proportion to the cost of living, and it is consequently with great regret that we announce the increase in the subscription price of the MONTHLY. The new price, however, is the same as it was for THE POPULAR SCIENCE MONTHLY from its establishment in 1872 to 1900, at which later date it was decreased to secure a larger circulation and a wider influence.

THE SCIENTIFIC MONTHLY is as much an educational and scientific institution as is a library, a museum or a university. It may be read each month by as many as 30,000 people. No university has so many students; few libraries or museums have a thousand visitors a day. The libraries, museums and universities could not exist without endowments or support from taxation. Our scientific journals are supported largely by scientific men who give their services as contributors and editors without payment or with inadequate payment.

If 10,000 additional subscribers could be obtained for THE SCIENTIFIC MONTHLY, it would be possible to pay contributors a just return for their work and at the same time to make the contents of the journal more timely and more interesting. When it is remembered that by the applications of science the productivity of labor has been increased fourfold and the length of life doubled, it seems a small return for scientific men to be paid liberally for their services and for scientific journals to be adequately supported.

We trust that in the interest of the journal, of science and of education no subscription will be withdrawn owing to the inevitable increase in nominal cost, but that, on the contrary, increased numbers of subscribers will make it possible to improve the journal and strengthen its influence.

## SUBSCRIPTION ORDER

To THE SCIENCE PRESS,

Publishers of THE SCIENTIFIC MONTHLY,

Sub-Station 84, New York City.

Please find enclosed check or money order for five dollars, subscription to THE SCIENTIFIC MONTHLY for one year, beginning February, 1920.

Name.....

Address.....

Single Number 50 Cents

Yearly Subscription \$5.00

**THE SCIENCE PRESS**

Lancaster, Pa.

Garrison, N. Y.

## The Royal Road to the Mind



THERE may be "no royal road to learning" but the path through the eye is certainly shorter. Children reason first with their sight; their judgment is actuated by the visual powers.

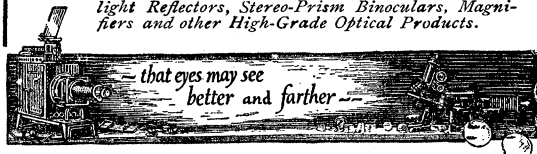
Just consider, then, how invaluable the BAUSCH & LOMB BALOPTICON is in classroom, laboratory and auditorium. Models are made for showing either lantern slides or opaque objects (photo prints, postcards, specimens, etc.) or both.

The Balopticon "speeds up" impression making and makes it everlasting. The name of the maker is your guarantee of long, thorough service.

### BAUSCH & LOMB OPTICAL CO.

New York Washington San Francisco  
Chicago ROCHESTER, N. Y. London

Leading American Makers of Photographic Lenses, Microscopes, Projection Apparatus (Balopticons), Ophthalmic Lenses and Instruments, Photomicrographic Apparatus, Range Finders and Gun Sights for Army and Navy, Searchlight Reflectors, Stereo-Prism Binoculars, Magnifiers and other High-Grade Optical Products.



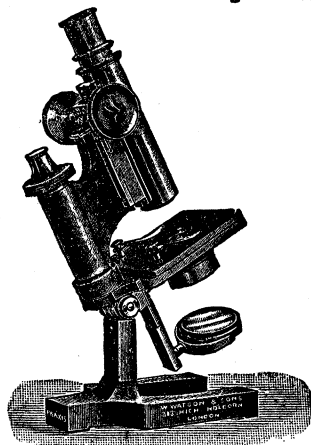
— that eyes may see  
better and farther —

## W. Watson & Sons, Ltd

BRITISH MADE

### STUDENTS MICROSCOPES

The "Praxis" Stand is the Student's model par excellence. Made throughout with the same accuracy and finish as Watson's high priced Stands.



A few special points are:—Standard construction so that additional movements may be fitted as required. Lever adjustment. Constructed of two castings and indestructible. All parts are slotted sprung to compensate for wear.

Catalogue of Microscopes and Accessories all purposes gratis on request from

### W. WATSON & SONS, Ltd.

Established 1837

313, High Holborn, London, England

## Refracting and Reflecting Astronomical Telescopes

### Standard and Portable

### Visual and Photographic OBJECTIVES

Computed by our associate

**Dr. F. R. MOULTON**

(Chicago University)

### OBSERVATORIES

Specula, Planes, Eyepieces, etc.

Photographs and Circulars on request

## LOHMANN BROS.

GREENVILLE, OHIO :: :: :: U. S. A.

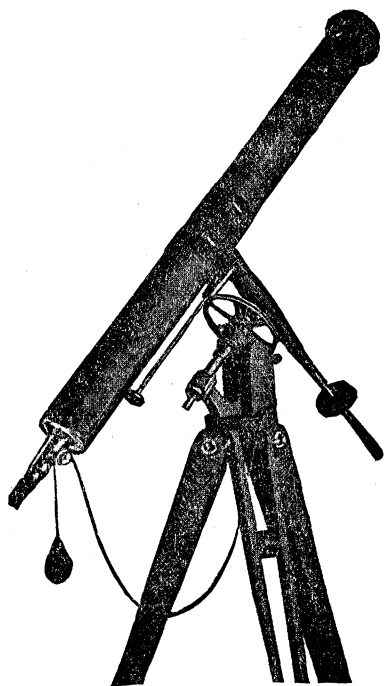


Illustration shows 5-in. with  
pneumatic clock